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Connecticut Department of Environmental Protection

citizens' bulletin

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Courtesy Wadsworth Atheneum, Hartford

See Four Centuries of 'Visions of the Sea' at Hartford's Wadsworth Atheneum

Inside *Dilophosaurus Has Its Day, 2; Fuel Saving for Boatsmen, 3; Natural Resources Careers, 4; Going Places, 7; Putting Together a Perfect Trout, 8; The Sea at the Atheneum, 9; Refurbishing Our Lakes, 10; Weeds: Gourmet Guide, 12; Getting a Hand on Air Pollution, 14; Roseate Tern Returns, 16; Regions Tackle Erosion, 17; Agreement, 18; Trailside Botanizing, 20.*

Dinosaur Has His/Her Day

People often neglect to see attractions right in their own back yards. So Dinosaur Park's Senior Interpreter Nancy Torgan was not too surprised to discover, in some "unscientific" surveys at other events, that, true to form, many Rocky Hill residents have never visited Dinosaur State Park.

As a result, in cooperation with the Rocky Hill Parks and Recreation Department, the Park declared April 27 Rocky Hill Day -- complete with dinosaur coloring contest, nature trail treasure hunt, visits by Smokey Bear, Woodsy Owl, the Rocky Hill Fire Department, and McDonald's Hamburglar.

Among the same day's festivities was the ceremonial planting of two dawn redwoods, gifts to the park from the Connecticut Tree Protective Association in honor of association members Albert Meserve, Robert A. Mackey, and Michael Paul.

Not present for the festivities: a twenty-foot long, eight-foot high model of Dilophosaurus, the dinosaur whose skeletal remains best match the larger prints among the 1,000 or so footprints in the Park's trackway.

However hopes are high that he (or she) will join the park soon. According to Josephine Newton, President of Friends of Dinosaur Park, that group has now raised $15,393.38 of a projected $20,000 toward the purchase of a model of Dilophosaurus. A Hartford Foundation for Public Giving grant will match the Friend's $20,000 when it's raised. And there is a contract, good for six months, for production of a scientific model of the dinosaur for $40,000.

If you would like to help raise the final $4,606.62, contributions can be sent to Friends of Dinosaur Park Association, P.O. Box 107, Manchester, Connecticut 06040.

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DON'T OPERATE YOUR BOAT FUELISH-LY

By Frank Glista, Boating and Hunting Safety Representative

Even though motorboating is not a significant consumer of fuel, the recreational boatman faces the gloomy predictions of fuel shortages this summer along with the certainty of higher prices. Like everyone else, the boatman must learn some new fuel saving habits to conserve as much energy as possible without completely changing his lifestyle.

Nationally, recreational boating consumes only one-half of one percent of the petroleum used in this country -- that's equal to one half tank of gas per car per year. Just as with your car, if you drive your boat more sensibly you can save a lot of fuel and still enjoy the same amount of time on the water while saving one-half to one-third of the gas formerly used.

Here are some fuel and money saving tips for boat operators.

1. Cut the throttle back. Operating at half throttle can save you more than half of your fuel consumption and still get you there in good time. Once the craft has attained a planing attitude, reduce throttle to a setting that just maintains it. The extra revs at full throttle don't add much speed, and they burn a lot of fuel.

2. Use the right propeller. You get more efficiency if the propeller is properly sized to your craft and motor. Replace a nicked or dented propeller.

3. Check motor height. The deeper the motor extends into the water, the greater the drag and the more fuel you use. Raise the motor out of the water to just short of the point where the propeller breaks out and cavitates on sharp turns.

4. Check boat trim. A boat that is squatting, plowing, or porpoising is wasting precious fuel. A properly trimmed boat will ride almost level or slightly bow up. Squatting (bow up) can be corrected by moving weight forward or moving motor tilt pin forward. Plowing is the opposite of squatting and can be corrected by moving weight aft or adjusting motor tilt pin aft. Porpoising (bow bobbing) can be eliminated by moving tilt pin forward to where the boat just stops its rocking motion.

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Top to bottom: DEP Foresters Peter Babcock, Huber Hurlock, and Charles Snyder.

Should you consider a career in natural resource management?

forester. . .wildlife biologist. . .fisheries biologist park/forest unit manager. . .conservation officer

By Lois Kelley, Director, Goodwin Conservation Center

What do people in these jobs have to say to someone who is asking about getting a job in their field?

To quote one: "DON'T!"
Another: "It's real tough!"

Job availability:

Exceedingly competitive
Turnover is very slow
For every job opening, there are five to ten people graduating every year. Sometimes there are more than a hundred applicants for a single job opening!

If you feel that you want to compete in this job market, read on. We'll try to give you some hints.

For all the jobs listed above, graduation from a four-year college is basic. Studies helpful at the college level are primarily in the sciences -- botany, taxonomy, dendrology, entomology, zoology, limnology, etc. -- with a need for good mathematical skills. For the future Conservation Officer, courses in criminal science offer the best background.

Actual situation:

At present the fact that there are so many more job seekers than available positions means that many four-year graduates are using that unemployed time to go on for their advanced degrees. The effect is to raise the level of competition since the applicant then must compete with many who have their Master's degrees as well as with the whole field of four-year graduates.

Best advice from those presently in the field:

You have to find ways to give yourself that "something extra" so that you will look better than other applicants when the crunch comes. There are several ways you can do this, and the most important is by planning ahead to use your non-school time wisely. You cannot start too soon!

Getting the "edge" on the next guy:

It's important that you start getting first-hand experience with the out-of-doors -- all that you can manage, at all times of year, and in all kinds of weather.

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Farming:

If you live, or work, on a farm, you already know what it is like to work out-of-doors and to operate equipment. This is a good first step.

Jobs:

Look for jobs (even if poorly paid) on farms, with nurseries or greenhouses, game farms, hatcheries, and nature centers; as a constable. If no paying jobs are available, volunteer. Experience counts! Supervisory experience counts more!

Volunteer work:

The opportunities here are nearly as broad as your imagination. As an example, you might volunteer to help your town's Conservation Commission or Wetlands Agency in its job of learning and teaching about your town's special features.

Clubs:

Become an active member in organizations such as Scout troops, 4-H clubs with outdoor emphasis, the Nature Conservancy, bird clubs.

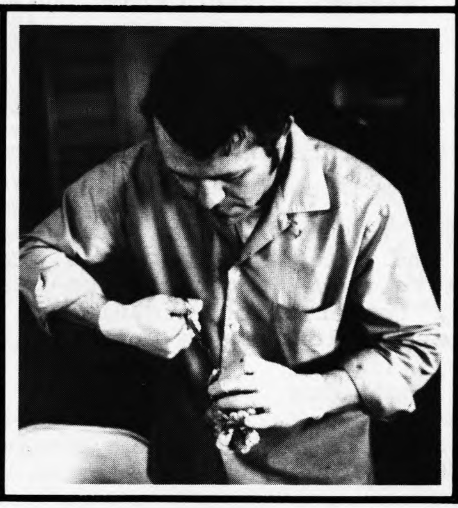
On your own:

If none of the above are possible, just get outside: hike, bike, ski, skate, jog, or just sit on the same rock for at least an hour every day observing. While doing these things, keep your eyes, ears, and brain working. Take a notebook and field guides. Make notes of what's happening, and when. Try to see relationships and changes. Draw conclusions and test them to see whether they'll hold up.

The "pay-off":

This type of an "edge-making" program pays off three times what you put into it. First, it will show a potential employer that you care. Second, it will help you, to a surprising degree, with your advanced studies later. And last (perhaps the most important), the more of it you do, the more you will enjoy it, just for itself.

Below left and center, Wildlife Biologist Paul Herig, Acting Chief of DEP's Wildlife Unit; below right, Fisheries Biologist James Moulton; above right, Fisheries Biologist Richard Hames.



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Other comments about these jobs:

All involve some amount of commitment to law enforcement. The Conservation Officer's job is largely enforcement, and is the only one which requires a character investigation before you can be hired.

A Connecticut driver's license is required for all these jobs with Connecticut's DEP.

Wildlife Biologists, Fisheries Biologists, and Conservation Officers must be in good health, have good physical endurance, and must know how to swim.

A Conservation Officer applicant may not be color blind.

A word of warning:

If you are a "wilderness" devotee, you will find a measure of frustration and conflict in any of these jobs. They all call for management of the environment in one way or another, and words like "build," "clear," "develop," "grade," "trap," "shoot," and "control" appear in all the job descriptions.

About desk work:

Many people think these jobs are out-of-doors and away from people. However, all the jobs require the ability to work with others, to relate to the general public, to give talks and educational programs, and to put together good written reports. In addition, the job of Conservation Officer requires the ability to organize and present testimony in court.

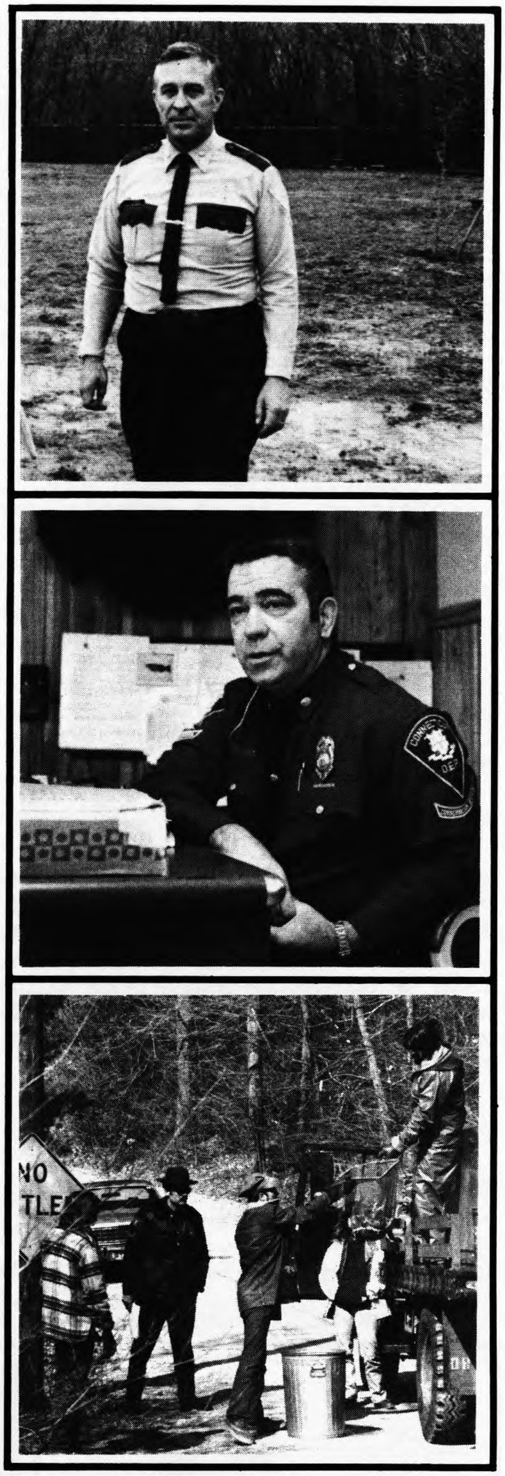
Those interviewed who are presently holding these jobs estimate that, even for field level jobs at the bottom of the scale, fifty to sixty percent of working time is spent indoors -- at a desk, at a meeting, or on other indoor phases of the work. They suggest that anyone going into this field would be forever grateful if he had managed to get a typing course in high school.

Where to look for jobs:

Eighty to ninety-five percent of the job openings for Foresters and Biologists are with governmental agencies -- state and federal.

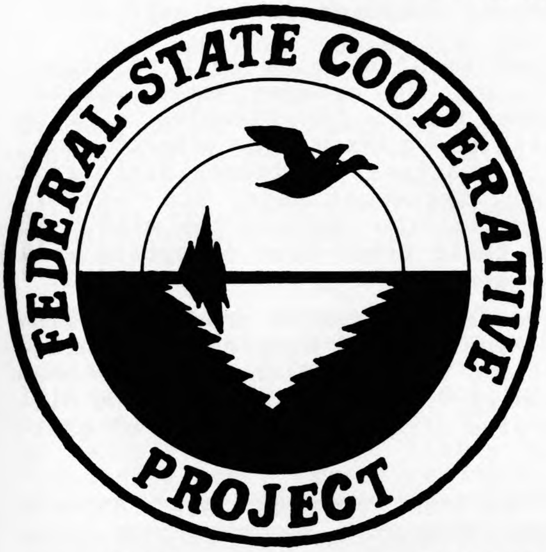
Other places to look: sawmills, loggers, parks (city, county, state, federal), power and telephone companies, arborists, big campgrounds, hunting clubs, technical consultant firms, nature centers, conservation organizations, youth agencies. Also self-employment as private consultant to landowners.

GOOD LUCK!



Top to bottom: Dinosaur State Park Unit Manager Arba Roberts; Law Enforcement Supervisor Donald DeBella; Conservation Officer Henry Konow.

A WIN...



Kenneth Blanchard, a junior at the Avon Old Farms School in Avon, was the winner -- with the design at left -- of Connecticut's competition to design a logo for fishery and wildlife areas and facilities supported under cooperative federal/state fish and wildlife act programs.

Blanchard's logo was selected for the $100 prize from among thirty-one entries. This fall the design will compete with finalists from twelve other Northeastern states. The final logo selection will be produced by the U.S. Fish and Wildlife Service and used to identify Federal Aid for Fish and Wildlife Restoration Acts funded projects in the Northeastern region. It is anticipated that it will also be adopted for use nationwide.

...A SPIN...

See Connecticut -- including some of our State Parks and Forests -- from your bicycle. Connecticut Bicycle Rides includes thirty tours, easy ones and tough ones, long and short loops -- from ten to eighty-five miles -- as well as sections on safety and basic bicycle maintenance and a list of repair shops.

American Youth Hostels has reprinted the book. It is currently available in most Hartford bookstores for $3.95.

If you can't locate Connecticut Bicycle Rides in a store, order by mail from: Babette Krolik, 106 Oakwood Avenue, Apt. B-6, West Hartford, CT 06119. By mail, add .50 for postage and handling. Make checks payable to Hartford Council, American Youth Hostels. If you're ordering five or more copies, contact Ms. Krolik at 244-3030 about wholesale rates.

...an outdoor vacation

This summer the National Wildlife Federation will offer three of the environmental workshop/vacations it calls Conservation Summits. These week-long programs are planned with single persons, couples, and families in mind.

The Adirondack Summit will be held from Sunday, July 29, to Saturday, August 4, in the Adirondack Mountains at the Silver Bay Association, a YMCA conference center 80 miles north of Albany on the shore of Lake George.

There will be a variety of adult classes -- thirty-six different subjects in all, including energy, environmental teaching, mammals, birds, entomology, astronomy, camp cooking, nature art, and nature photography. Participants can earn college credit.

This summer's other Summits will be held June 23 through June 29 at the Blue Ridge Assembly in the Blue Ridge Mountains east of Asheville, North Carolina, and July 2 through July 8 at the YMCA of the Rockies at Estes Park, Colorado.

For complete information on Summit registration, fees, courses, and accommodations, write to: Conservation Summit, National Wildlife Federation, 1412 Sixteenth Street, N.W., Washington, D.C. 20036. Or phone 703-790-4363.

Wanted: trout that grow fast, grow bigger, mature early, produce more eggs, survive better in the wild, and offer fishermen more challenge

There's a lot more involved in supplying Connecticut's lakes and streams with roughly a million trout and hundreds of thousands of salmon annually than just breeding and feeding fish. Connecticut's State fish hatcheries must concern themselves with the health and safety of their charges -- protecting them from threats that range from viral disease to the predatory birds that find good feeding at hatchery ponds.

At the Quinebaug Hatchery they are also trying to "better the characters" of fish -- as well as to lower costs of raising them -- by cross-breeding. Goals of these efforts include creating the "perfect" trout -- brook or brown or rainbow -- and developing salmon with new lifestyles.

"We're looking," says Quinebaug's manager, Michael Vernesoni, "for fish that produce greater numbers of eggs, grow faster, grow bigger, mature early, live longer, and survive better in the wild. We're also trying to develop a fish that will hold over in Connecticut."

Some cross breeding also concerns itself with fish "personalities" -- creating warier fish and fish with more "fight" to please the State's sportsmen.

"We also," Vernesoni says, "try to avoid the genetic failures that can result from inbreeding over generations in a limited population of fish. And we try to take advantage of the factor biologists call 'hybrid vigor.'"

To create a better trout or a different sort of salmon, Quinebaug brings in trout and salmon -- as eggs -- from all over the country as well as from Canada. In years past, eggs have also come from England, Scotland, Denmark, Sweden and France and from as far away as Tasmania.

The cross-breeding process, which Vernesoni describes as "fairly scientific," falls somewhere between the genetic engineering of science fiction and the guesswork of old fashioned matchmakers or current-day computer dating services.

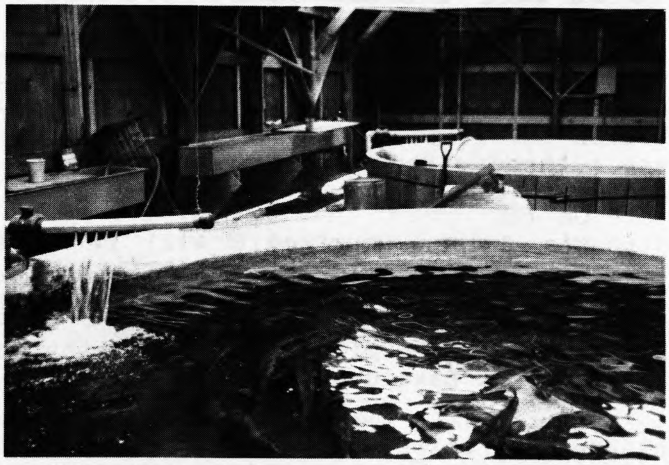
Desired results -- as well as actual results -- for the crosses vary. Quinebaug's brown trout, for example, will be crossed with brown trout from a hatchery at Bitterroot, Montana. These Bitterroot brown trout, Vernesoni says, are "wilder" and seem to survive well in the wild. So it's hoped their cross-bred offspring will do well in the hatchery and in the wild.

Connecticut's rainbow trout and rainbows from Wyoming, New Hampshire, Washington State, and Indiana hatcheries have been crossed and re-crossed to develop nine different strains with different sets of qualities.

The various batches are closely watched to document results. So the hatchery knows, for instance, that while Quinebaug's own young rainbows had reached exactly the same average size on the same dates in 1977 and 1978, this year young rainbow trout which were the product of a cross with Kamloop rainbows from British Columbia were already half an inch longer at ten days younger.

In another match, the hatchery's brook trout are being hybridized with larger-growing, longer-lived Assinica brook trout from New York. The hatchery's brook trout, Vernesoni says, normally live four years. The Assinica variety lives up to eight years. Vernesoni hopes Quine-

Broodfish, foreground, swim in one of the pools at the Quinebaug Hatchery's quarantine station. New strains of fish come into this separate station as eggs and are hatched in small gravel incubators. Small fish are moved to troughs, background, and as they grow larger, to pools. Incoming strains of fish spend a minimum of eighteen months in quarantine.



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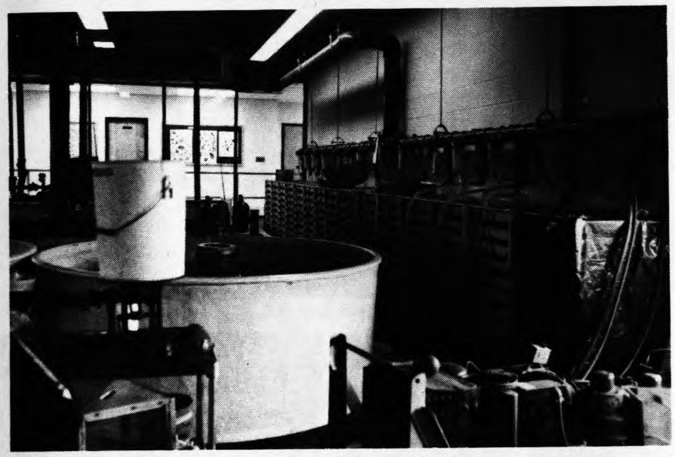
baug's cross of the two fish may produce a brook trout with perhaps a six-year lifespan.

The hatchery began its current program of cross-breeding with its rainbow trout in 1975 after it was noticed that egg production per fish and egg fertility rates were dropping and survival rates for young rainbows had dropped. Breeding in some new strains of rainbows, Vernesoni says, quickly brought viability rates back up.

Some hatcheries, Vernesoni explains, raise the same strain of fish for generations -- the hatchery at Cortland, N.Y., for example, has been raising a strain for 100 years. If you are looking at large populations of fish -- 300,000 to 400,000 or more -- there are likely to be few "brother-sister" crossbreedings. But, Vernesoni says, if you are producing smaller numbers of a fish -- 50,000 for example -- using only 50 to 75 parents, there is much more chance for inbreeding and for eventual"genetic failure."


Once past quarantine period, new fish strains can be brought into Quinebaug's main hatchery. There, eggs are hatched in 120-tray incubator, at rear. Six-foot pools, foreground, accommodate batches of 20,000 to 50,000 small fish, but each new hybrid strain must have its own pool.

Cross-breeding results are not always good, Vernesoni says. If a cross is an obvious failure, the fish are disposed of while they are still very small and represent a minimal investment in manpower and food. If they are "ok but not great," they just go into lakes and streams as part of the hatchery's regular annual stocking programs rather than being held for any further breeding.

The usual batch of fish, Vernesoni says, begins with ten thousand to twenty thousand eggs. Gradually, as the fish grow, the hatchery stocks out fish until a brood stock of about 500 remain.

The Quinebaug Hatchery is federally certified as "disease free" -- meaning every three to six months it is visited by a federal pathologist from the Fish and Wildlife Service in Hadley, Massachusetts, who randomly selects and does pathological rundowns on about 150 fish to assure that the hatchery remains free of diseases.

Importing fish from other hatcheries -- even though these facilities are also certified as disease-free -- poses the potential for introducing some strange disease along with the strange fish.

To prevent this, Quinebaug added a completely separate quarantine station in 1976. The only such facility in the country, it was the work of a team of Connecticut's Young Adult Conservation Corps members.

Thus new strains of fish arrive at Quinebaug as eyed eggs and are hatched in small gravel incubators in the quarantine station. The fish are tested at least three times for disease. Only after eighteen months with certification that the strain is disease-free are any of the fish moved into the main hatchery.

This summer, at Hartford's Wadsworth Atheneum...

On our cover this month: "Captain Strout's House, Portland Head, 1927," a watercolor over pencil by American artist Edward Hopper (1882-1967). From the Wadsworth Atheneum's Ella Gallup Sumner and Mary Catlin Sumner collection, it is one of sixty-six pieces of European and American marine painting and sculpture included in "Visions of the Sea 1550-1971." The exhibition will hang at the Atheneum through September 2, 1979.

See the Sea

New Office Tackles 'Problems of Aging' of State's Lakes

By James Murphy, Principal Environmental Analyst, and Tess Gutowski, Publicist, Water Compliance Unit.

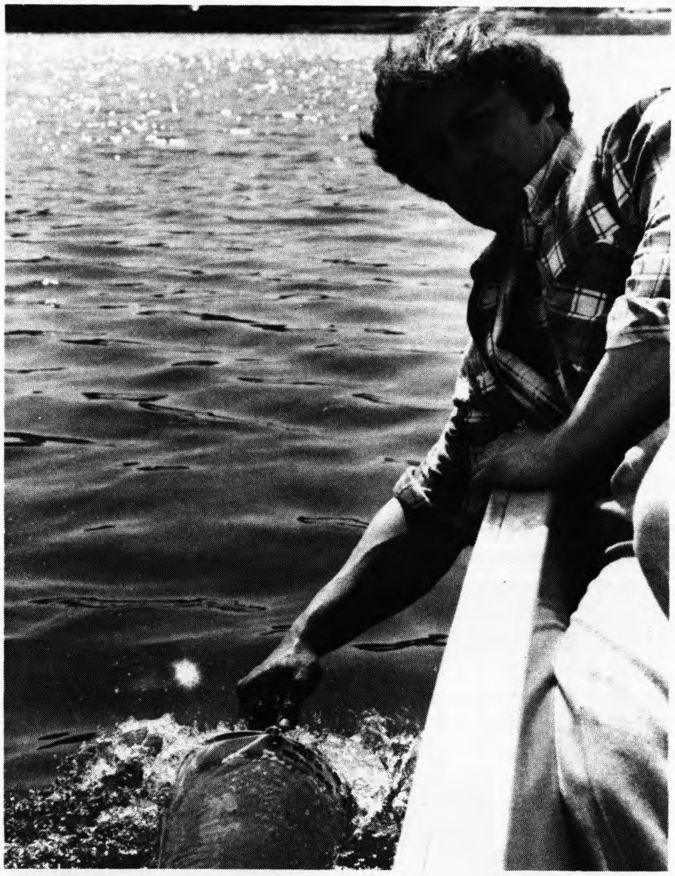
While Connecticut's water resources--rivers, streams, lakes and ponds, surface wetlands, and ground water--are abundant, they are, at the same time, finite and heavily exploited. Perhaps the most noticeable, appreciated, and intensely used of these and the most susceptible to damage are the undermanaged lakes and ponds. Connecticut's new Office of Lakes Management, within the DEP, has as its goal preserving those lakes with good water quality and restoring those lakes that exhibit poor ecological conditions.

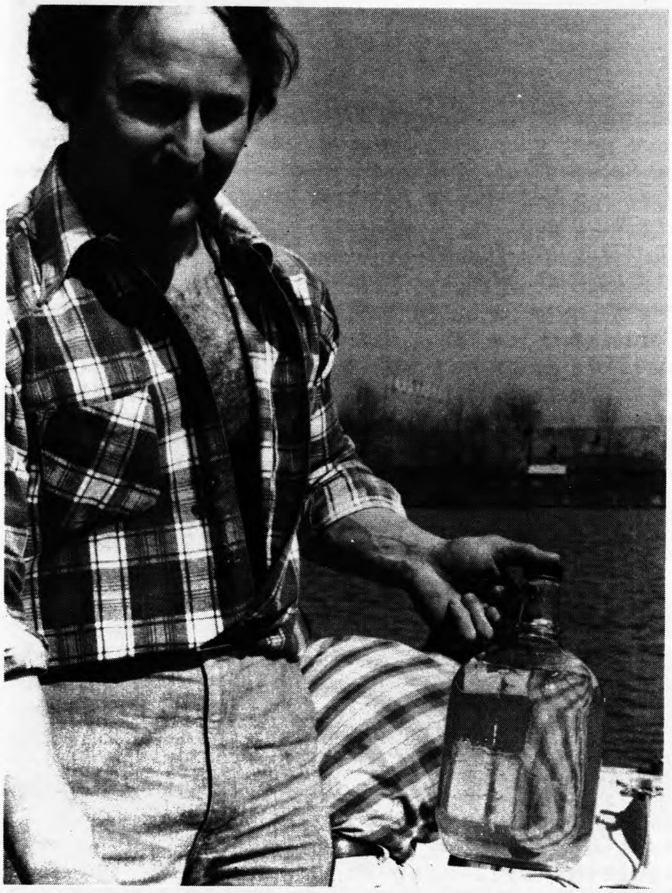
Recent revisions to the Federal Water Pollution Control Act (FWPCA), now known as the Clean Water Act, are enabling the Connecticut DEP to place more emphasis on managing water quality in publicly owned freshwater lakes. In an effort to realize the national lake clean-up goals, the EPA will provide federal financial assistance through state lakes management agencies for the systematic survey, classification, and priority ranking of lakes.

Total state/EPA funding for the new program in Connecticut has been set at $151,913. The Lakes Office, which is located within the Water Compliance Unit of the DEP, has been funded for a period of eighteen months--March 1979 to September 1980. It is hoped that after the eighteen month period has expired, the program will be extended into a long term effort.

Historical Background

Back in June 1978, the Lakes Management Committee of the Connecticut Areawide Waste Treatment Management Planning Board (Connecticut's 208 Agency) recommended that Commissioner Pac create a formal, centralized lakes management unit within the DEP. The Committee's review of Connecticut's lake management efforts revealed that the water quality problems of lakes were numerous and more individual attention to lakes was needed. The Committee found the existing lakes program to be underfunded and not staffed to adequately deal with the lakes issues. In response to these findings, Commissioner Pac applied





Tess Gutowski photos

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Checking the health of a lake: Field Biologist Joseph Nestico, top left, takes a surface sample of phytoplankton -- microscopic plant species which are indicators of the condition of a lake. Below left, Nestico checks a composite, surface-and-bottom sample of the water -- its green color suggests a lake in the mesotrophic or eutrophic stage. Below, Nestico samples lake bottom for plant life. Above, DEP maintainer Thomas Hayes takes water temperatures at various depths and checks levels of dissolved oxygen.

for the newly offered federal funds to expand Connecticut's Lake Management Program.

Classification of Lakes

Lakes are classified by a system which summarizes their physical, chemical, and biological characteristics. Three types of lakes are:

1. Eutrophic--a lake very rich in nutrients, as evidenced by excessive concentrations of algae and/or aquatic plants like water lilies.

2. Mesotrophic--a lake containing moderate amounts of nutrients, with no observable algal blooms and few stands of aquatic macrophytes, i.e., those aquatic plants visible to the naked eye.

3. Oligotrophic--a lake with low concentrations of nutrients, with no algae problems, and an essential absence of macrophytes.

A general survey, taken in 1976, of all of Connecticut's publicly owned freshwater lakes revealed approximately 25 percent of those lakes sampled were in the eutrophic state. The DEP expects more lakes to exhibit eutrophication as land use activities surrounding the water bodies increase. It must be noted, however, that not all lake problems are the fault of human activity. Some lakes are naturally predisposed to the eutrophic state, just as others are naturally inclined to be mesotrophic or oligotrophic.

More often than not, human activity can and does directly contribute nutrients to already eutrophic lakes, making them more eutrophic and hastening their demise.

Life Cycle of a Lake

In nature, a lake's existence may be marked in distinct phases through an extended time period. The classical story is that of a deep crystal-clear, cold water lake (oligotrophic state). It receives nutrient material over time and eventually passes into middle age (mesotrophic state). The "middle-aged" lake begins to fill in with sediment and plant remains, eventually changing into a shallow, warm water, green colored, "old" lake (eutrophic state). The old lake is invaded by upland vegetation, changing what was once a deep water body into a wooded swamp.

This eutrophication process may take thousands of years to complete. Cultural forces (human activity), however, can

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Nature Notes

by Penni Sharp

Some Common Edible Plants

By April, many vegetable fanciers have begun work on their gardens, and during the ensuing months they will be weeding and tending crops to provide food for the table. In Connecticut, the frost-free period is roughly from May to October, and those with vegetable gardens must make the most of a relatively short growing season. Often overlooked by the garden hobbyist, however, is the wealth of nutritous wild plants, more commonly recognized as "weeds." These offer palatable eating without the work associated with gardening.

A large number of roadside, lawn, and garden weeds are species of plants not native to this country. They are, in fact, "garden escapes" that were brought to America by the early settlers. Originally cultivated, many of these plants went wild -- to some minds, too wild -- and became naturalized. Such plants include: purslane (Portulaca oleracea), dandelion (Taraxacum officinale), Queen Anne's lace or wild carrot (Daucus carota), lamb's quarters (Chenopodium album), and yellow rocket or winter cress (Barbarea verna or B. vulagaria).

Learning to recognize common wild edible plants can be rewarding to both mind and body, and knowing their nutritional value may foster greater tolerance for these beneficial weeds.

The Dandelion *(Taraxacum officinale)*

Anyone who has ever attempted to eradicate the familiar dandelion from lawn or garden will attest to the persistence of this wild plant. Its long tap root anchors the plant firmly in the soil, and its wind-borne seeds, equipped with tiny parachutes, guarantee vigorous seed dispersal.

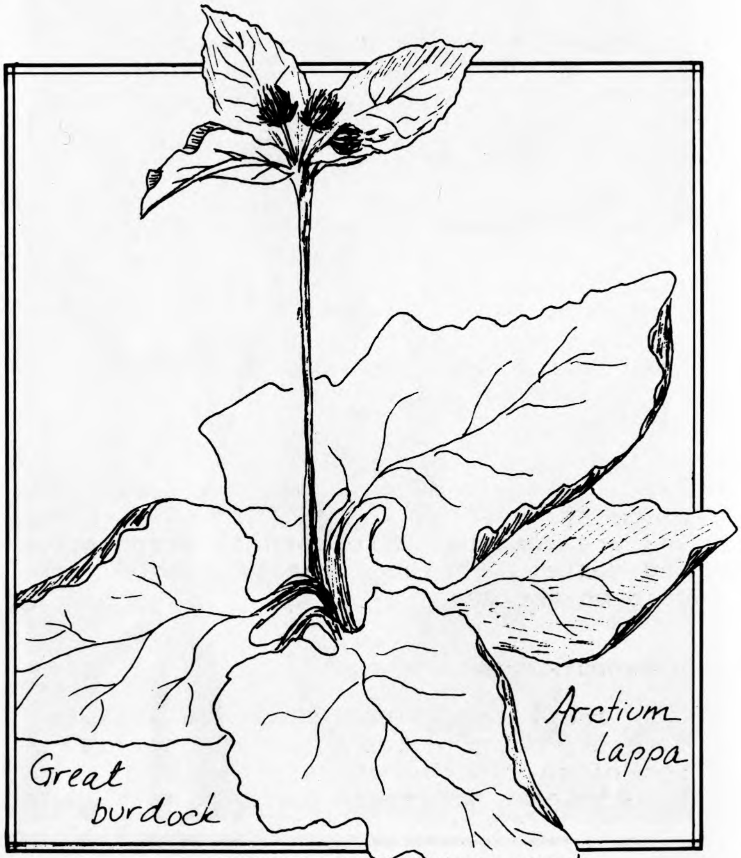
The leaves of this plant are edible, the first-grown being the most tender and the sweetest. Young dandelion leaves make a good addition to a salad, whereas older and probably more bitter leaves are best boiled twice with a change of water each time. Serve the cooked greens with butter, lemon juice, and seasoning. Wine is sometimes made from the flowers. The roots have been used for medicinal purposes, as a substitute for coffee, and as a natural dye.

Burdock *(Arctium lappa)*

Burdock, perhaps best known for the burrs which hold tenaciously to clothing and animal fur, is another edible plant. The plant has very large, leathery leaves, and the leaf stalks somewhat resemble rhubarb. In Japan, a domesticated variety of burdock is known as "Gobo" and is grown and marketed. It is said to have restorative powers and to give one endurance and strength.

Our common burdock is similar to the Japanese cultivated species. The root of this plant is the edible portion, and when peeled, sliced, and cooked, it is quite tasty. Obtaining the roots is laborious work, as they resist being pulled and must be dug out.

Burdock is a biennial plant, forming a large basal rosette of leaves the first year, and producing the flowering stalk



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during the second year. It is from the first year plants that the roots should be taken, preferably during June and early July, for it is then that they are most tender. Some use the early spring leaves of the burdock, cooking them in two waters to remove bitterness. In addition, very young leaf stalks can be used, either raw in salads or cooked.

Lamb's Quarters *(Chenopodium album)*

Wild spinach is another common name for this weed which belongs to the same plant family (Chenopodiaciae) as spinach and beets. It is a common roadside weed and has pale green, ovoid leaves. The leaves of lamb's quarters shed water in much the same way as a duck's feathers, and the leaf undersides appear silvery, particularly after a rainstorm.

As with many wild edible plants, lamb's quarters should be collected for the pot when they are young and tender, less than a foot high. Cooking time for lamb's quarters is longer than for spinach, but the two are similar in taste. Like spinach, young tender leaves of lamb's quarters make a nice addition to a salad.

Cattail *(Typha latifolia)*

The cattail, a common marsh plant, was recognized by the Indians for its food value. As a wild edible plant, it is unsurpassed in its utility for almost all parts of this plant can be used. The bright yellow pollen, which is produced in the spring in quantities, can be used with flour in bread making.

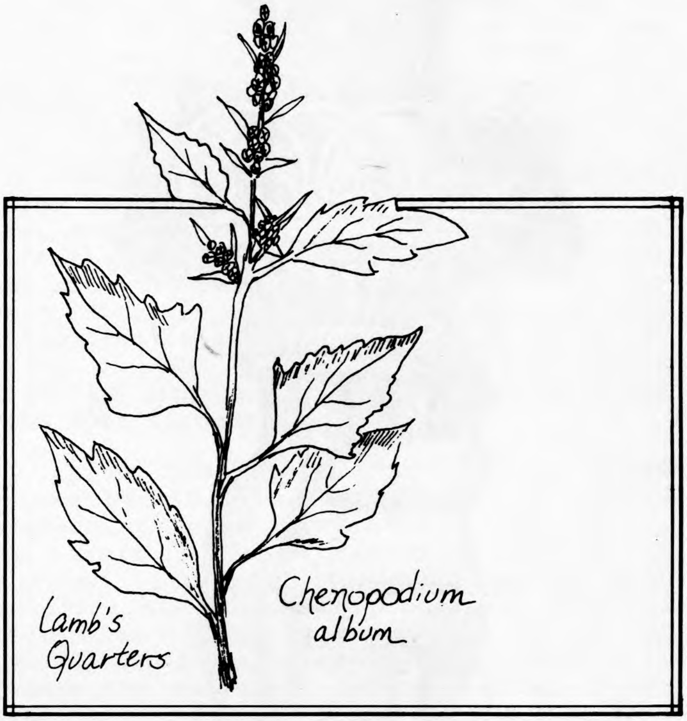
From fall until spring, when the vegetative portion of the plant has died back, the rootstocks can be harvested and a flour ground from the central core. If one regards this as too much work, the sprouts on the ends of the rootstocks, which are next year's cattails, are tasty either as is or as a cooked vegetable.

In the spring, young shoots can be pulled from the ground, peeled, and eaten -- again either raw or cooked. The bloom spikes on a cattail are also edible and are somewhat like corn in preparation and taste. The buds can be nibbled like corn on the cob.

Milkweed *(Asclepias syriaca)*

The purple flowered common milkweed, favorite plant of the Monarch butterfly, is not often thought of as an edible plant. Nonetheless, different parts of this plant can be harvested throughout its growing season. Milkweed retains a unique taste, unlike the several vegetables which it may resemble. It can be quite bitter, and it is therefore recommended that special steps be taken in its preparation. Place milkweed in a pot, cover with boiling water and cook for one minute. Repeat this process three times, discarding the water each time, and for the final boil, cook for at least ten minutes.

In early spring, the young shoots can be gathered when several inches high, cooked as described, buttered, salted, and served. The unopened flower clusters, which resemble broccoli florets, can be harvested and prepared in a similar manner. They do not need as long a boiling time. Finally, young pods can be gathered and prepared, but they require a slightly longer cooking time. The young pods can be delicious if gathered at the right time, before they become tough.



Chicory or Blue Sailors *(Chicorium intybus)*

This cheerful plant of the roadsides can provide one with greens for salad and with an excellent substitute for coffee. The leaves resemble dandelion greens in taste and texture and can be treated similarly.

In these days of high coffee prices, it might well be worth the effort to make the chicory brew. To do this, collect a number of chicory roots, wash them thoroughly, and roast them slowly in a low

To p.19

Mary Jane Spring

Modeling gets a hand on pollution...

By Victor Gagliardo and Robert Sussman, Massachusetts Audubon Society Environmental Interns

When an aerospace engineer designs a new rocket he makes a model of it and puts the model through various tests. If it passes the tests, a full scale prototype is built. If it fails, the company was spared the cost of manufacturing a bad rocket. Likewise, before large facilities are built that will spew out great quantities of air pollution, air pollution engineers make mathematical models to see just what effects the new source will have and whether the region as a whole will still meet the National Ambient Air Quality Standards (NAAQS). The following situation shows how one plan's problems showed up in modeling.

In 1976, the Federal Energy Administration (now the Department of Energy), proposed that three Connecticut electric generating facilities stop burning oil and switch to burning bituminous coal. A study indicated that uncontrolled total suspended particulate (TSP) emissions would increase more than one hundred times, while uncontrolled sulfur dioxide (SO2) emissions would increase more than ten-fold. Modeling showed that both TSP and SO2 ambient air concentrations would increase from four to ten times, violating the existing standards. To this date, the oil to coal switch has not been implemented.

Air pollution modeling ordinarily involves using computer-based mathematical models to determine what effects either large pollution sources or pollution control measures would have on ambient air quality. These models are usually called dispersion models because they describe how pollutants disperse in the atmosphere.

There are several air pollution dispersion models available. The two most often used in the State of Connecticut are PTMTP and the Air Quality Display Model (AQDM). PTMTP is geared toward simulating the individual pollution source on a short-term (24-hour) basis. Its results are maximum 24-hour pollutant levels which, when added to background levels, must be less than or equal to the NAAQS. AQDM, on the other hand, sums up all the air pollution of a specified region on a long-term (annual)

➡

...before pollution gets into the air

basis. The output supplies pollutant levels averaged out over an entire year.

PTMTP is used primarily in the evaluation of new source permit applications, but it is also a valuable tool for assessing the impacts of existing point sources -- that is, sources with specific outlets to the environment, usually smokestacks. Point sources might be municipal incinerators, fossil fuel power plants, or industrial boilers. AQDM deals both with point sources and larger non-localized sources, called area sources. An area source might be a highway or all the residential space heating systems in a city.

The new source permit process is the major use of air pollution modeling. When someone -- an industrial concern, a municipal waste superintendent, or an electric utility -- wants to build a new facility which will emit polluted air, they must apply for a new source permit. Approximately 200 applications are received by DEP in an average year. In general, if the new plant won't cause significant deterioration of the existing local air quality, the permit is granted. If the air is already too bad in an area or the new source will make it significantly worse, the permit is rejected pending modifications such as control equipment.

The standard modeling procedure for all new and existing point sources employs a second computer program, PTMAX, as well as PTMTP. PTMAX uses the Gaussian plume dispersion equation to find the point(s) at which the maximum pollutant concentration will result from a modeled stack. PTMAX used by itself does not provide enough information, since it doesn't take into account important factors like local topography and various meteorological conditions. The results of PTMAX are used to develop the input for PTMTP. PTMTP is more complex and provides pollutant concentration predictions at specific locations called receptors. The receptor coordinates are chosen using the PTMAX outpout as a guideline.

Additional information about the source -- stack height, emission rate, flow rate, temperature -- as well as predominant local meteorological conditions is also fed into the computer. The model then calculates the behavior of an air pollution plume blowing toward the receptors. The plume disperses evenly in the crosswind directions, forming a cone in the downwind direction. Ground level concentrations depend on the height of the plume, the fallout rate, the degree of dispersion atmospheric conditions, and local terrain. PTMTP predicts the pollutant concentrations the modeled point source will cause at each receptor.

The model AQDM can handle up to 3000 sources and 237 receptors and can be used to model the entire State of Connecticut, which is about the largest area that can be modeled accurately. AQDM uses the same general modeling equations as PTMTP, but, unlike PTMTP, it can also model area sources.

Using AQDM to model Connecticut results in a listing of areas within the state that are not attaining the NAAQS. This information is used to help set guidelines for the attainment of these standards. If, for example, it is found that home heating fuel combustion is a major contributor to violations of the standards, then guidelines might be proposed to lower emission rates from home furnaces.

After modeling is completed for a new source permit, the results must be interpreted and acted upon. For a new source, the permit is either granted or refused. If a permit is refused, the applicant may wish to alter his polluting processes, increase the height of his stacks (within limits), or install control equipment, all of which will reduce the pollution impact. After implementing any of these measures, the applicant may reapply for a permit.

For long-term air quality planning, the output from modeling has a different purpose. Knowing what the major polluters are, where they are, and their combined effects on Connecticut's air is important for developing control strategies. Such strategies might include requiring installation of industrial control equipment or limiting the number of automobiles in certain areas. These strategies and others become part of Connecticut's long-range plans for clean air.

Victor Gagliardo and Robert Sussman are seniors studying environmental engineering at the University of Massachusetts and Brown University respectively. They worked as summer employees in DEP's Air Compliance Unit through the Massachusetts Audubon Society's Environmental Intern Program.

coastal
area
management
71 capitol avenue hartford conn. 06115

CAM NEWS

The Roseate Terns: “Connecticut's “Swallows of Capistrano”

By David Tedone, Public Participation Assistant

Three miles south of Madison, in the central Sound, lies Falkner's Island -- a very small, uninhabited stretch of land five acres square. The island is presently owned by the U.S. Coast Guard and at one time was the site of a navigation lighthouse. Today, the lighthouse is abandoned, and human activity is practically nonexistent except for the occasional visit of a naturalist who has come to catch a glimpse of the Roseate Tern.

Falkner's Island is unique to Connecticut, and to the region, because of its tern population. There, on the protected offshore island, in the relatively calm atmosphere, free from human intervention, a thousand pairs of common terns and perhaps fifty pairs of their rarer cousin the roseate, can easily be found nesting and rearing their fledglings.

The roseate tern is a migratory bird which breeds and raises its young each spring and summer along the shores of the bountiful northern waters. In fact, the migration is quite regular, with the roseates arriving on Falkner's Island about May 15 each year, give or take a few days.

In A Field Guide to the Birds, ornithologist Roger Tory Peterson describes the species as "about the size of a Common Tern. White, with a very pale gray mantle, black cap, black bill (not always), and red feet; tail very deeply forked. In most individuals the black bill sets it apart from similar species. Many Roseates have some red around the base of the bill, and it is not uncommon to find birds with bills almost as red as those of the Common Terns. Roseates in flight appear whiter than Commons (creamier under parts and pale primaries) and the wing stroke is deeper. Close inspection reveals extremely long outer tail-feathers. At rest, the tail-tips extend far beyond the wing-tips."

The bird has very attractive long feathers, a quality which once brought about its mass slaughter by plume hunters. Plummage was used to decorate women's hats. Fortunately, the hunting of this species and others was ended by international treaty in 1918, and the roseate tern population has since slowed its rapid decline.

An important factor contributing to the survival of the roseate is the uninhabited Falkner's Island, which today harbors the third largest tern population on the Eastern Seaboard. The island even played a crucial role in roseate history; there the birds found refuge during the great plume hunts of the early 1900s. The inaccessibility of the island no doubt contributed to their safety. Today, the area is said to be of regional, if not national, significance as a result of the tern population. It is also one of the northernmost habitats of the roseate, a species which is on the State's list of declining species.

Roseate terns, like their cousins the Sooty and Least, lay their eggs out in the open: on rocks, in the sand, on grass, or on bare ground, without making any attempt to hide them or to build a nest for protection. As a result, they are particularly vulnerable to animals (whether predators or not) and easily accessible to observers. It has been observed that one dog can virtually destroy an entire tern colony in an hour. Hence the isolation of Falkner's Island has been significant to the roseates' success in nesting and rearing their young.

Small fish which are found in schools swimming near the surface of the water are the main food of the roseate. When a school of fish is sighted, the bird will dive and pluck its prey from the water with amazing speed and finesse. At times, the birds even plunge below the surface, resurfacing after a few seconds with their catches, and sometimes holding as many as three fish in their beaks at once. Roseates are very graceful fliers. Their long, sleek appearance makes them the "greyhounds" of the terns, according to Arthur Bent. In his book, Life Histories of North American Gulls and Terns, Bent observes poetically that as the roseate

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208 WATER QUALITY MANAGEMENT

209 COURT ST., MIDDLETOWN, CT. 06457 347-3700
By Joseph M. Rinaldi, 208 Public Participation Assistant

Regional Agencies Help With Erosion, Sedimentation Controls

During the initial phase of the Connecticut 208 Program, a great deal of effort was spent on the problem of erosion and sedimentation. Each regional planning agency has mapped soils with a high potential for erosion, while the soil and water conservation districts conducted an Erosion and Sedimentation Source Inventory (ESSI). The inventory determined that soil loss from construction activities, streambanks, roadsides, and surface mining exceeds 370,000 tons per year.

After the preliminary data had been compiled and examined, it was apparent that erosion and sedimentation constitutes a substantial water quality problem. It is important to note that the ESSI figures do not include soil loss from cropland. Nor do the figures include estimates of the amount of eroded soil which actually is deposited in a water body. However, one has only to look at a river during a storm to realize that some of that soil has indeed made its way into the water.

The sediment that is deposited in a stream can cause several problems. It can interfere with fish and other aquatic life. It can fill in the stream bed to the point where the river can no longer carry heavy flow without the danger of flooding. And it also serves as a transport mechanism for other pollutants to enter the water. It has been estimated that 1.33 billion cubic yards of sediment is deposited in America's reservoirs each year. This represents a loss in water storage capacity of 270 billion gallons, or an amount sufficient for a city of five and one-half million people.

Since erosion is a natural process, it would be neither possible nor desirable to eliminate it completely. However, man can accelerate erosion by the unwise use of the land. Construction activities that strip acres of land of its topsoil, create slopes too steep for proper stabilization, or ignore natural drainage patterns set the stage for erosion and the resulting sedimentation of nearby waters. Agricultural operations that disregard the use of cover crops, contour plowing, strip cropping, etc., can cause similar problems.

In an effort to address the problem of erosion and sedimentation, the Connecticut 208 Program has contracted with the regional planning agencies to work with their respective member towns to implement erosion and sedimentation requlations. At present, there are some communities in Connecticut which actively employ effective erosion control ordinances which are generally included in planning and zoning or subdivision regulations. Other communities have ordinances on the books which are either haphazardly enforced, not enforced, or too general or vague for enforcement. Still others have no regulations at all.

The role of the regional planning agency will be to review and assess each town's present erosion and sedimentation controls and enforcement activities. If necessary, regulations and programs for the control of erosion and sedimentation will be drafted to meet the needs of each town. And finally, the RPA will work with appropriate town agencies and/or commissions to implement the controls. The end result will be cleaner water for all to enjoy along with ensuring that landowners preserve valuable soil which might otherwise be washed away.

Parks Proscribe Keg Beer

With the recreation season getting started, William Miller, Chief of the Parks and Recreation Unit, reminds citizens that beer in kegs is no longer permitted in State Parks or State Forests. The regulation change prohibiting keg beer officially became effective in July 1978. Implementation was postponed until September 9, 1978, however, to allow for the posting of signs.

According to Miller, the new regulation was adopted as a result of numerous incidents involving intoxicated visitors in which property was damaged and park employees injured while attempting to restore order.

The regulation will, Miller said, be strictly enforced in all recreation areas, and violators will be subject to prosecution under the "Infractions" sections of the Connecticut General Statutes.

Help Complete FY 1980 State/EPA Agreement

By Tess Gutowski, Publicist, Water Compliance Unit

The new State/EPA Agreement must be completed by both the Department of Environmental Protection and the Deparment of Health Services and submitted to the EPA for Connecticut to qualify for federal funding for programs under the Clean Water Act, the Resource Conservation and Recovery Act, the Clean Air Act, and the Safe Drinking Water Act. The new Agreement will present integrated approaches to solving water pollution control problems, water supply, air quality, and solid waste problems.

DEP's Water Compliance, Solid Waste, Hazardous Wastes, and Air Compliance Units and the Department of Health Services (DOHS) will be working together in the planning, implementation, and management of environmental programs at the state level. Governor Ella Grasso has designated DEP Deputy Commissioner Melvin J. Schneidermeyer as the coordinator of this new integrated approach.

The Agreement policy dictates that the negotiation process must include the State, the EPA, and the public. All three segments are expected to consider environmental priorities, define problems, and develop creative and efficient solutions.

A public hearing, which will be held jointly with the DEP Hearing on the Connecticut Construction Grant Priority System and Project Priority List for Publicly Owned Waste Treatment Works for Fiscal Year 1980, will be held in Room 4 1/2, State Capitol, Hartford, on June 14 at 10:00 a.m.

More information about the State/EPA Agreement may be obtained from: Richard Barlow, Water Compliance Unit, 122 Washington Street, Hartford (566-2588).

Boating To Save Fuel From P. 3

5. Tune engine. Fouled plugs, poor timing, clogged ports, or poorly seated valves and rings waste fuel and reduce engine performance.

6. Clean hull. A boat bottom that is fouled with barnacles, slime, or grass does not slide through the water easily, thus requiring more power. If you keep your craft in the water during the boating season, clean it frequently, either in the water or by hauling out to scrub it clean. Waxing the bottom of a trailable boat reduces drag and increases speed.

7. Fuel carefully. Careless filling of on-board or portable tanks wastes fuel and creates safety hazards. In addition, spilt fuel on navigable waters is a violation of the Clean Water Act, punishable by heavy fines.

8. Boat closer to home and shore. Avoid long, high speed cruises. Enjoy local waters, and avoid long trailer hauls of trailable boats.

9. Forego cowboying. Avoid excessive changes in speed and direction. This practice endangers you, your passengers, and other water users along with wasting fuel.

10. Consider weather. Go boating on calm days. It's more enjoyable and safer, and you save gas when you don't have to buck waves and wind.

Return of the Roseate Tern From P. 16

"floats along, with its long tail feathers streaming out behind, it seems to cleave the air with the greatest ease and swiftness, like a slender-pointed arrow."

The roseates' stay on Falkner's Island is somewhat limited. Usually by August the birds have completed nesting, the fledglings have matured enough to fly and hunt, and the population seems to spread out over the region, following the schools of small fish and resting on sandy beaches. Their stay along the Connecticut coast is said to correspond with the bluefish runs. By November they are gone, wintering as far south as Chile -- not to be seen around Connecticut again until the temperature warms and the calendar rolls around again to May 15.

Conservation Award

William H. Risley, President of the White Memorial Foundation in Litchfield, has announced that nominations for the Foundation's Conservation Award for 1979 will be received until June 1st.

Letters of nomination, together with supporting evidence, should be sent to the Foundation, P.O. Box 368, Litchfield, Connecticut 06759.

The winner will be honored on July 14th at the Friends of the White Memorial Conservation Center Annual Assembly Day Program in Litchfield.

New Lakes Program From P. 11

greatly accelerate the aging process--turning an oligotrophic lake into a much more enriched one in a matter of decades.

Fortunately, Connecticut's DEP has an aggressive, comprehensive water quality planning and management program which has resulted in significant improvement in our water bodies. No natural lake is subject to direct point source discharges, and few lakes are impacted by upstream point sources. It has become evident through qualitative and quantitative studies of many Connecticut lakes that the biggest problem and source of water quality degradation is the introduction of phosphorous. Phosphorous is generally the plant nutrient which is most limited in Connecticut lakes. The introduction of increased amounts of this nutrient--via precipitation, soil erosion, or internal recycling of a lake or from water fowl, septic systems, plants, livestock, soaps and detergents, or fertilizers--is generally manifested in excessive algae and plant populations which are considered objectionable by man.

Control of point source pollution is relatively easy compared to the control of non-point sources such as runoff from streets, agricultural lands, construction sites, landfills, and suburban developments. The on-going non-point source evaluation process by Connecticut's 208 Group, the Areawide Waste Treatment Management Planning Board, is intended to identify, locate, and quantify these sources. The 208 Program is also required to develop the best management practices for non-point source control. At this time, phosphorous and soil erosion pose the most immediate and detrimental threats to lakes.

Program Composition

In order to assure that a wide spectrum of interest groups (natural resources management, regional planning groups, citizens, etc.) become involved with the lakes planning and management process, a formal advisory group will be established. The primary advisory functions of the Committee will be to define what lakes will be surveyed and classified, identify lakes for diagnostic studies, and establish criteria for development of a priority ranking system.

The new Office of Lakes Management will operate under a two-phased process after a classification and priority system are established. Phase I will involve detailed diagnostic/feasibility studies aimed at analyzing identified problems in specified priority lakes. Implementation of corrective measures identified in these studies will be undertaken in Phase II. Control methods may include watershed control measures for point and non-point sources of pollution abatement as well as in-lake techniques which may include weed harvesting, dredging, artificial aeration, chemicals, and drawdown or lowering of water levels.

Success of the new lakes program will depend upon active citizen participation. It is hoped that citizens will become a supportive arm of the lakes office and will endeavor to keep abreast of current lakes-related issues and information. Contact person for the Lakes Office is Senior Environmental Analyst Brian Emerick. His telephone number is 566-2588.

Eating Out... From P. 13

temperature oven. When the roots become brittle and appear dark brown throughout, they can be removed, cooled, and ground. Chicory brew can be prepared in the same manner as coffee, but, as it is stronger, less need be used.

* * *

These are but a few of the numerous wild plants that can be harvested and consumed with no investment other than time. These weed species have been enormously successful plants, having adapted well to differing conditions since their initial introduction to America. Learn to recognize these enduring plants. From them, one can bring variety to the table.

For additional information regarding identification and preparation of wild foods, consult Euell Gibbons, Stalking the Wild Asparagus and Stalking the Blue-eyed Scallop, Field Guide Editions, published by David McKay Company, Inc., New York.

Trailside Botanizing

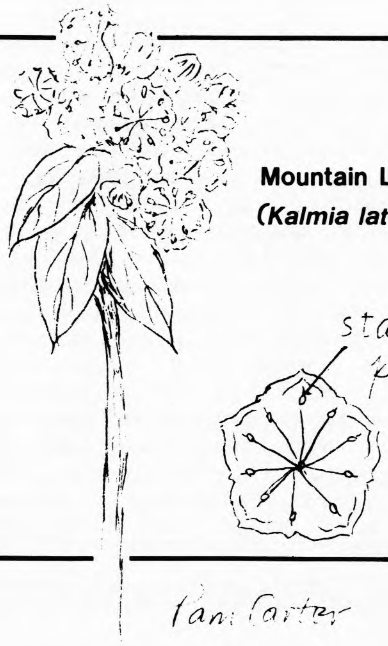
by G. Winston Carter

Our beautiful state flower will soon be in full blossom. It grows as a shrub usually, up to twenty feet in height. On occasion, it reaches a height of forty feet. It is commonly found in areas that have soil which is rocky and sandy, and it may form dense thickets.

The flower is about three-quarters of an inch in diameter and varies in color from pink to white. The blossoms are clustered at the end of twigs.

The leaves of this species are said to contain a poison which, when eaten by animals such as sheep, will cause intense salivation and even paralysis, but it is sometimes eaten by deer and grouse in small amounts, apparently with no ill effects.

The petals are fused and appear wheel-shaped. There are ten pits or depressions that indicate the boundaries between petals. The ten stamens are arched away from the pistil in the center and fit neatly into each pit. If the flower is touched in the right way, as when a bee lands on it, all the anthers of the stamens spring upward. In doing this, they come in contact with the hairy body of the insect and cover it with pollen.



Mountain Laurel
(Kalmia latifolia)

The blooming of the laurel in all its splendor seems to bring to a close the grand pageantry of spring flowers and henceforth the pace slackens somewhat as the summer flowers begin to make their presence felt.

DEP citizens' bulletin

State of Connecticut
Department of Environmental Protection
State Office Building
Hartford, Connecticut 06115

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DEP Citizens' Bulletin Supplement

Public Hearings

June 18, 1979; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider application of Connecticut Department of Transportation to reconstruct intersection of Routes 218 and 189. Regulated activities include construction of a triple 10' x 11' box culvert at Wash Brook, the extension of a 36" culvert south of Cottage Grove Road, and construction of a riprapped ditch from the culvert to the brook.

June 18, 1979; 10 a.m.
Rm. 1, 122 Washington St., Hartford
To consider application of Torin Corp., Torrington, to discharge 168,000 gallons per day of non-contact cooling water to West Branch, Naugatuck River.

June 20, 1979; 10 a.m.
Rm. 1, 122 Washington St., Hartford
To consider application of CEA/JFB Associates, Manchester, to discharge storm water runoff from excavated area to unnamed tributary of Naugatuck River in Beacon Falls and Seymour.

June 20, 1979; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider application of Thames Valley State Technical College to construct storm water drainage outlet within wetlands in conjunction with construction of parking facility in Norwich.

June 21, 1979; 10 a.m.
Rm. 221, State Office Bldg., Hartford
To consider application of Connecticut Department of Transportation to realign and widen Rt. 218 from Palm Street to Rt. 187; relocate Maplewood Avenue, from Douglas Street to relocated Rt. 218; and realign Mt. St. Benedict from Rt. 187 east to Joyce Street in Bloomfield. Regulated activities include excavation for construction of culverts and associated storm drainage.

June 22, 1979; 10 a.m.
Rm. 1, 122 Washington St., Hartford
To consider application of the Ehrenkrantz Group, P.C., of New York to discharge 8,625 gallons per day of sanitary sewage from proposed housing complex to the sanitary sewerage system in the City of Stamford.

June 26, 1979; 10 a.m.
Rm. 1, 122 Washington St., Hartford
To consider application of Bridgeport Elderly Associates to discharge 12,800 gallons per day of sanitary sewage from the proposed elderly housing complex to the sanitary sewerage system in the City of Bridgeport.

Permits Issued

Water Resources

Inland Wetlands

5/18/79: Conn. Dept. of Transportation
To alter a watercourse south of intersection of Routes 7 and 35 in conjunction with construction of that intersection in Ridgefield. Regulated activities include replacement of 2 existing endwalls for placement of 36" pipe and catchbasin-junction box and construction of storm water drainage system to outfall into said catchbasin. Conditions.

Encroachments

5/14/79: John F. Goetjen & Son, Inc., Wilton
To construct addition to a commercial building riverward of established stream channel encroachment lines for the Norwalk River.

Tidal Wetlands/Structures & Dredging

4/27/79: Dixon Downey, Groton
To install utility lines across tidal wetlands and under bottom of Fishers Island Sound from Mason Island to Andrews Island by trenching and back filling tidal wetland portions and by non-excavating embedment underwater; to construct and maintain on the west side of Andrews Island a pile and timber pier, floating dock, and mooring piles, to construct on the east side of Andrews Island a pile and timber pier, ramp, and mooring piles. Conditions.

5/23/79: Dorothy McCullough, Riverside
To construct and maintain 70' of riprap in Longmeadow Creek at Riverside within tidal wetlands. Conditions.

5/2/79: Albert B. Hartog, Jr., Westport
To construct and maintain approximately 80 lineal feet of timber bulkhead to extend 7' to 8' beyond mean high water into the Five Mile River at Rowayton and fill area shoreward to 11.5' above mean high water. Conditions.

5/4/79: Town of Waterford
To amend Permit No. SD-75-199 to reflect design and route changes in the Smith Cove crossing of an interceptor sewer. Conditions.

5/7/79: Old Harbor Marina, Clinton
To retain and maintain 760 linear feet of 6' floating dock and to relocate approximately 200' of 6' floating dock in Clinton Harbor. Conditions.

5/10/79: Mr. & Mrs. John Tufano, Westbrook
To retain and maintain a concrete seawall beyond mean high water in Long Island Sound on West Brook Beach. Conditions.

5/23/79: Cilco Terminal Co., Inc., New Haven
To construct an 80' sheet steel pile bulkhead and place 1,070 cubic yards of backfill behind it, then construct a concrete pier and bulkhead extending over the water and supported by concrete-filled steel pipes in Bridgeport Harbor. Conditions.

5/23/79: City of Bridgeport Development Administration
To construct and maintain a pile and timber pier approximately 590' x 25', a floating dock 432' x 8' with 15 finger floats, a stone-filled timber crib breakwater with wooden dock, and a concrete surfaced pile and timber pier approximately 840' x 55' with ferry boat berth and ramp frame beyond mean high water in the Poquonnock River. Conditions.

Water Compliance

3/23/79: Waterbury Companies, Waterbury
To discharge cooling water and boiler blowdown to the Mad River.

3/23/79: The Leverty & Hurley Co., Bridgeport
To discharge settled wastewaters from sand and gravel washing to Naugatuck River in Beacon Falls.

3/23/79: Harvey Hubbell, Inc., Newtown
To discharge non-contact cooling water and minor boiler blowdown to tributary of the Pootatuck River.

4/18/79: Ideal Manufacturing Co., Beacon Falls
To discharge treated waste from metal finishing operation to Hemp Swamp Brook, 1.3 miles upstream from Naugatuck River.

4/18/79: Timex Corp., Middlebury
To discharge treated waste from a metal finishing operation to Long Swamp Brook at Little Tracy Pond.

4/18/79: Donham Craft, Naugatuck
To discharge treated waste from metal finishing operation to Fulling Mill Brook.

4/18/79: Lewis Engineering Co., Naugatuck
To discharge treated waste from metal finishing operation to Long Meadow Brook.

4/18/79: Risdon Manufacturing Co., Naugatuck
To discharge treated waste from metal finishing operation to Long Meadow Brook one-half mile upstream from Naugatuck River.

4/18/79: Waterbury Buckle Co., Waterbury
To discharge treated waste from metal finishing operation to Mad River.

4/18/79: Risdon Manufacturing Co., Waterbury
To discharge treated waste from metal finishing operation to Smugg Brook, just upstream from Naugatuck River.

4/18/79: Anchor Fasteners Div., Buell Industries, Waterbury
To discharge treated waste from metal finishing operations to Steele Brook.

4/18/79: Winchester Electronics, Oakville
To discharge treated waste from metal finishing operation to Steele Brook at Pin Shop Pond.

4/18/79: Scovill Manufacturing Co., Apparel Fasteners Div., Watertown
To discharge treated waste from metal finishing operation to Steele Brook, just upstream of Pin Shop Pond.

4/18/79: Electrochemical Processes, Oakville
To discharge treated waste from metal finishing operation to Turkey Brook.

4/18/79: Robert Shaw Controls, Lux Time Div., Waterbury
To discharge non-contact cooling water to Beaver Pond Brook at Capt. Neville Drive Industrial Park.